

REMARKS

Claims 8-17 are withdrawn, and claim 18 has been cancelled. Claims 1-7 are presented for examination.

The Examiner has rejected the claims under 35 U.S.C. § 103(a) over U.S. Patent Publication No. 2002/0113622 to Blasi et al., U.S. Patent Publication No. 2003/0186110 to Sloop, or U.S. Patent No. 5,554,462 to Flandrois et al., each in view of either U.S. Patent Publication No. 2001/0028871 to Harrison et al. or U.S. Patent Publication No. 2004/0005267 to Boryta et al.

As an initial matter, Blasi et al. and the present invention were, at the time of the present invention, both assigned to or subject to an obligation of assignment to The Gillette Company. As such, Blasi et al. does not qualify as prior art for 103(a) purposes.

As to the remaining rejections, each of the pending claims recite an electrochemical cell containing between about 100 and 1500 ppm by weight of sodium. The Examiner has acknowledged that none of the primary references expressly disclose a specific sodium content, and has relied upon Harrison et al. or Boryta et al. to provide this missing limitation.

Neither Harrison et al. nor Boryta et al. disclose or suggest an electrochemical cell containing from about 100 to 1500 ppm by weight of sodium. Both Harrison et al. and Boryta et al. disclose methods for producing lithium carbonate, lithium chloride, and/or lithium metal (see Harrison et al. at the Title, Abstract, and paragraphs 0004 and 0023; see Boryta et al. at Abstract and paragraphs 0003-0004, 0038-0040 and 0043). While Harrison et al. reference the requirements for high purity lithium carbonate for use in lithium batteries, it is only in the context of the preparation of lithium carbonate cathodes or metallic lithium (paragraphs 0005, 0007); Harrison discloses or suggests nothing about the sodium content of the remainder of the components of an electrochemical cell. Similarly, Boryta et al. identify only the need for low sodium lithium metals for battery applications, without referencing any requirement that the remainder of the electrochemical cell be low in sodium.

In addition, none of the primary references disclose or suggest any reason to limit the amount of sodium present in an electrochemical cell. For example, none of the cited primary

references recognize that the sodium content of a cell is either important or affects the performance of the cell. There is no indication in the primary references that the cell should be manufactured and/or handled in a certain way to provide the claimed sodium content. There is also no indication in any of the primary references of where the cell components were purchased or whether they were provided to have a low sodium content. All of these factors can result in a cell having a sodium content outside the claimed sodium content. Harrison et al. do not provide motivation to reduce the sodium content of the electrochemical cell because, as noted above, Harrison et al. disclose or suggest nothing about the sodium content of an electrochemical cell, taken as a whole. Harrison et al. also do not disclose or suggest that sodium in a lithium cathode would result in lowering the performance of an electrochemical cell, instead disclosing only the desirability of avoiding impurities such as sodium when one is producing high purity lithium metal without providing any explanation as to why such is desirable. Boryta et al. indicate that "sodium becomes reactive and potentially explosive in certain chemical processes, particularly those in production of lithium metal from lithium salts," (paragraph 0004), and that lithium metal having sodium concentrations of about 1 wt % and higher render the metal more reactive to natural components of air, making the metal more dangerous and difficult to handle. The only suggestion provided by these references is to avoid sodium in the production of lithium metal, and only because it is potentially dangerous to have sodium in the reactions used to make lithium metal or in the final lithium metal product. Nothing is suggested as to the sodium level of the entire electrochemical cell, as claimed.

For at least the reasons discussed above, Applicants believe that the claims are in condition for allowance, which action is requested. Upon allowance of the claims, Applicants request reconsideration of claims 8-17, which can be rewritten to depend from generic claim 1. Claims 8-17 are patentable over the cited references for at least the same reasons that the claim 1 is patentable.


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Enclosed are a Petition for Extension of Time and the accompanying fee. Please apply any other charges or credits to deposit account 06-1050, referring to attorney docket 08935-257001.

Respectfully submitted,

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